

CLAIMS:

1. A method for discharging a reduced smoke pyrotechnic display device, comprising the steps of:

propagating flame over one or more surfaces of said pyrotechnic composition within said launch tube;

igniting said smokeless pyrotechnic propellant; and

expelling said ignited pyrotechnic composition from a discharge end of said launch tube.

2. The method of Claim 1 for discharging a reduced smoke pyrotechnic display device further including the initial step of igniting a pyrotechnic prime composition within said launch tube, said pyrotechnic prime composition disposed in combustion proximity to said pyrotechnic composition; and

wherein ignition of said pyrotechnic prime composition facilitates propagating said flame over said one or more surfaces of said pyrotechnic composition within said launch tube.

3. The method of Claim 1 for discharging a reduced smoke pyrotechnic display device further including the step of consuming a combustion delay component separating said ignited pyrotechnic composition from a smokeless pyrotechnic propellant prior to igniting said smokeless pyrotechnic propellant.

4. A method for assembling a reduced smoke pyrotechnic display device, comprising the steps of:

providing a launch tube having an enclosed base, an open discharge end, and a barrel disposed between said enclosed base and said open discharge end;

placing a smokeless pyrotechnic propellant within said enclosed base;
enclosing said smokeless pyrotechnic propellant within said enclosed base;
placing one or more pyrotechnic compositions within said enclosed base;
enclosing said one or more pyrotechnic compositions within said enclosed base;
and
placing at least one ignition source within said enclosed base in combustion proximity to one or more pyrotechnic compositions.

5. The method of Claim 4 for assembling a reduced smoke pyrotechnic display device further including the step of placing a second ignition source within said enclosed base in combustion proximity to said smokeless pyrotechnic propellant.

6. The method of Claim 4 for assembling a reduced smoke pyrotechnic display device wherein said one or more pyrotechnic compositions include at least one aerial shell, said aerial shell consisting of a non-burning body having a hollow core within which is contained at least one pyrotechnic charge and a delay fuse associated with said at least one pyrotechnic charge; and

wherein said at least one ignition source is placed in combustion proximity to said delay fuse.

7. The method of Claim 4 for assembling a reduced smoke pyrotechnic display device further including the step of disposing a non-combustible separation member within said enclosed base between said one or more pyrotechnic compositions and said smokeless pyrotechnic propellant.

8. The method of Claim 7 for assembling a reduced smoke pyrotechnic display device wherein said non-combustable separation member includes at least one axial bore, said at least one axial bore obstructed by a combustion delay element.

9. A reduced smoke pyrotechnic display device, comprising
an enclosed base defining an open ended combustion chamber;
a launch tube coupled to said enclosed base about said open ended combustion chamber, said launch tube having an open discharge end;
a smokeless pyrotechnic propellant disposed in said open ended combustion chamber;
a sealing member fittingly disposed in said combustion chamber between said smokeless pyrotechnic propellant and said open discharge end;
at least one pyrotechnic composition disposed in said combustion chamber between said sealing member and said open discharge end;
one or more ignition sources disposed in said combustion chamber in operative proximity to said at least one pyrotechnic composition.

10. The reduced smoke pyrotechnic device of Claim 9 wherein said sealing member further includes an axial bore; and
a combustion delay component is disposed to obstruct said axial bore.

11. The reduced smoke pyrotechnic device of Claim 9 further including a closure member fittingly disposed in said combustion chamber between said at least one pyrotechnic composition and said open discharge end.

12. The reduced smoke pyrotechnic device of Claim 9 further including a second ignition source disposed in said combustion chamber in operative proximity to said smokeless pyrotechnic propellant.

13. The reduced smoke pyrotechnic device of Claim 9 wherein said one or more pyrotechnic compositions include at least one aerial shell, said aerial shell consisting of a non-burning body having a hollow core within which is contained at least one pyrotechnic charge;

a delay fuse associated with said at least one pyrotechnic charge; and

wherein said at least one ignition source is placed in combustion proximity to said delay fuse.